
Science Flight Report

Operation IceBridge Arctic 2012



Flight: Falcon 14, 15
Mission: Southeast Grid-5 (land ice)

Flight Report Summary

Aircraft	Falcon (HU-25) N525
Flight Number	Falcon 07
Flight Log number	12F001
Date	Thursday, May 10, 2012 (Z)
Purpose of Flight	Flight to southeast Greenland to refly 2011 ATM track, 2010 LVIS track, and four new LVIS lines, also overflow Twin Otter iceSAR-2012 transect for Jorgen Dall & Malcom Davidson
Take off time	1020 Zulu at Kangerlussuaq (refueled at Kanger). Flew two legs, first leg duration 3.3 hrs; second leg, 3.0 hrs; total 6.3 hrs
Landing time	1730 Zulu at Kangerlussuaq
Flight Hours	6.3 hrs
Aircraft Status	Fuel computer failed during second leg, returned to base at end of LVIS line. This failure ended the campaign.
Sensor Status	All installed sensors operational.
Significant Issues	Clouds within 150 km of Kangerlussuaq
Accomplishments	• Flew repeat lines over ATM and LVIS tracks.
Geographic Keywords	Southeast Greenland
Satellite Tracks	none
Repeat Mission	Repeated part of 2011 ATM track, 2010 LVIS track, flew four new LVIS tracks

Science Data Report Summary

Instrument	Data Volume			Instrument Issues
	Survey Area	Entire Flight		
LVIS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	54 GB	None
LVIS cameras	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	63 GB	None

Mission Report (Seelye Martin, Acting Project Manager)

Flew to southeast Greenland to survey a variety of lines. Weather was marginal near Kanger with open area to south and west. Track lines were 95% cloud free, with most of the cloudiness near Kanger. As shown on the figure, a variety of ATM, LVIS lines were flown. We also flew one glacial flow line given to us by the Science Team. Also, at the request of Jorgen Dall & Malcom Davidson, we overflew their iceSAR-2012 transect. Data was cloud-free except for the region within about 150 km of Kangerlussuaq.

The distances flown for each case is as follows:

ATM 2011 track = 189 km
Total ATM track = 189 km
Flow line track = 312 km
Total flow line track = 312 km
New LVIS track = 386 km, 391 km, 134 km, 199 km
Total new LVIS = 1,110 km
IceSAR-2012 transect = 178 km

Total distance flown (including turns and transit) = 4,165 km

The mission was terminated when the engine fuel computer failed on the last LVIS line. The engine went into fail-safe mode. At the end of this line, the Falcon returned to base, and the flights ended.

Individual instrument reports from experimenters on board the aircraft:

LVIS: The LVIS system worked well and collected data along the track lines.

LVIS-cameras: worked well.

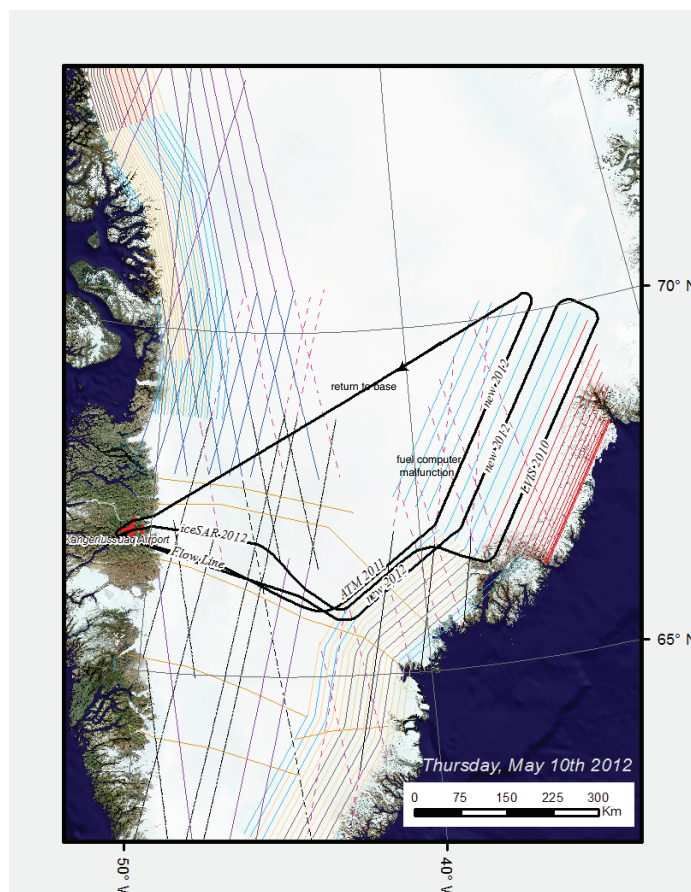


Figure 1: Figure showing Leg-1, Leg-2 trajectories for Southeast Grid-5 flight. See text for more information.